CDC Approach to BSI Prevention in Dialysis Facilities

(i.e., the Core Interventions for Dialysis Bloodstream Infection (BSI) Prevention)

Selecting an antimicrobial ointment for hemodialysis catheter exit sites

CDC recommends using povidone iodine ointment or bacitracin/gramicidin/polymyxin B ointment at the hemodialysis catheter exit site after catheter insertion and at each hemodialysis session. Bacitracin/gramicidin/polymyxin B ointment is not currently available in the United States. Triple antibiotic ointment (bacitracin/neomycin/polymyxin B) is available and might have a similar benefit but studies have not thoroughly evaluated its effect for prevention of bloodstream and exit-site infections. Other ointments that have been studied include single antibiotic ointments (e.g., mupirocin). However, concerns exist about development of antimicrobial resistance and also their ability to cover the spectrum of potential pathogens (e.g., gram-negative and gram-positive bacteria) that can cause bloodstream infections in dialysis patients.

Another important consideration is that ingredients in antibiotic and povidone-iodine ointments may interact with the chemical composition of certain catheters. Therefore, before any product is applied to the catheter, first check with the catheter manufacturer to ensure that the selected ointment will not interact with the catheter material.

1. **Surveillance and feedback using NHSN**

Conduct monthly surveillance for BSIs and other dialysis events using CDC's National Healthcare Safety Network (NHSN). Calculate facility rates and compare to rates in other NHSN facilities. Actively share results with front-line clinical staff.

2. **Hand hygiene observations**

Perform observations of hand hygiene opportunities monthly and share results with clinical staff.

3. **Catheter/vascular access care observations**

Perform observations of vascular access care and catheter accessing quarterly. Assess staff adherence to aseptic technique when connecting and disconnecting catheters and during dressing changes. Share results with clinical staff.

4. **Staff education and competency**

Train staff on infection control topics, including access care and aseptic technique. Perform competency evaluation for skills such as catheter care and accessing every 6-12 months and upon hire.

5. **Patient education/engagement**

Provide standardized education to all patients on infection prevention topics including vascular access care, hand hygiene, risks related to catheter use, recognizing signs of infection, and instructions for access management when away from the dialysis unit.

6. **Catheter reduction**

Incorporate efforts (e.g., through patient education, vascular access coordinator) to reduce catheters by identifying and addressing barriers to permanent vascular access placement and catheter removal.

7. **Chlorhexidine for skin antisepsis**

Use an alcohol-based chlorhexidine (>0.5%) solution as the first line skin antiseptic agent for central line insertion and during dressing changes.*

8. **Catheter hub disinfection**

Scrub catheter hubs with an appropriate antiseptic after cap is removed and before accessing. Perform every time catheter is accessed or disconnected.**

9. **Antimicrobial ointment**

Apply antibiotic ointment or povidone-iodine ointment to catheter exit sites during dressing change.***

* Povidone-iodine (preferably with alcohol) or 70% alcohol are alternatives for patients with chlorhexidine intolerance.

** If closed needleless connector device is used, disinfect device per manufacturer's instructions.

*** See information on selecting an antimicrobial ointment for hemodialysis catheter exit sites (at left). Use of chlorhexidine-impregnated sponge dressing might be an alternative.

For more information about the CDC Dialysis BSI Prevention Collaborative, please visit http://www.cdc.gov/dialysis/collaborative/

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